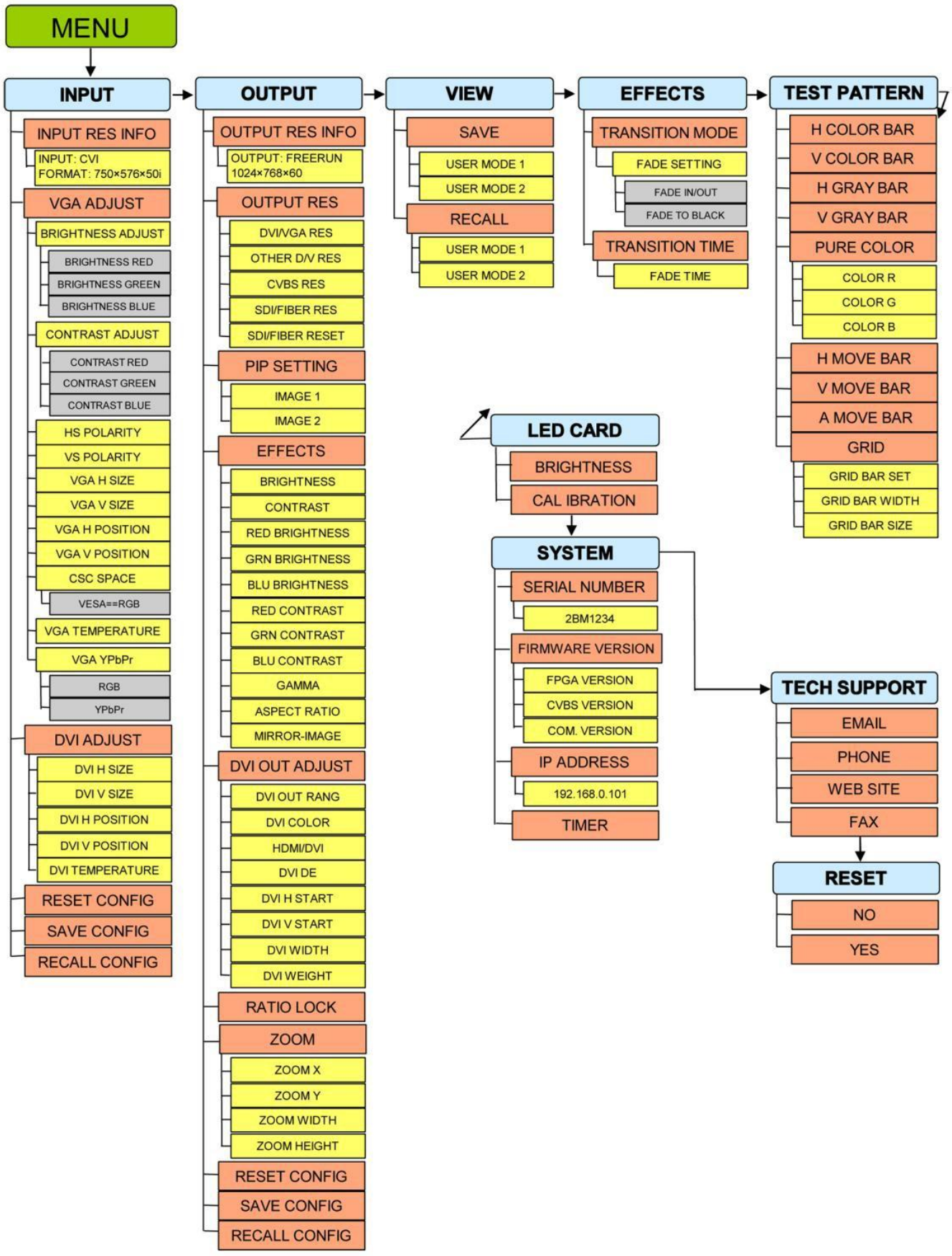
LX496

2-LAYER SWITCHER AND SCALER

USER MANUAL

Menu Structure



USER MANUAL

1. Introduction

To all residents of the European Union

Important environmental information about this product

This symbol on the device or the package indicates that disposal of the device after its lifecycle could harm the environment. Do not dispose of the unit (or batteries) as unsorted municipal waste; it should be taken to a specialized company for recycling. This device should be returned to your distributor or to a local recycling service. Respect the local environmental rules.

If in doubt, contact your local waste disposal authorities.

Thank you for choosing Luxibel®! Please read the manual thoroughly before bringing this device into service. If the device was damaged in transit, do not install or use it and contact your dealer.

2. Safety Instructions

	This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children shall be supervised to ensure that they do not play with the appliance.
	Indoor use only. Keep this device away from rain, moisture, splashing and dripping liquids. Never put objects filled with liquids on top of or close to the device.
	Risk of electroshock when opening the cover. Touching live wires can cause life-threatening electroshocks. Do not disassemble or open the housing yourself. Have the device repaired by qualified personnel. Do not operate the device without the cover installed. **Warning:** If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid any hazard. Make sure that the available voltage does not exceed the voltage stated in the specifications in this manual.
	Always disconnect mains power when device not in use or when servicing or maintenance activities are performed. Handle the power cord by the plug only.
	There are no user-serviceable parts inside the device. Refer to an authorized dealer for service and/or spare parts.
	Do not use near inflammable products or in explosive atmospheres.

- This device falls under protection class I. It is therefore essential that the device be earthed. Have a qualified person carry out the electric connection.
- The maximum ambient temperature is 45 °C. Do not operate the device at higher temperatures.

3. General Guidelines

Refer to the **Velleman® Service and Quality Warranty** on the last pages of this manual.

	Keep this device away from dust and extreme temperatures. Make sure the ventilation openings are clear at all times. For sufficient air circulation, leave at least 1" (± 2.5 cm) in front of the openings.
	Protect this device from shocks and abuse. Avoid brute force when operating the device.

- Familiarise yourself with the functions of the device before actually using it.
- All modifications of the device are forbidden for safety reasons. Damage caused by user modifications to the device is not covered by the warranty.
- Only use the device for its intended purpose. Using the device in an unauthorised way will void the warranty.
- Damage caused by disregard of certain guidelines in this manual is not covered by the warranty and the dealer will not accept responsibility for any ensuing defects or problems.
- Keep this manual for future reference.

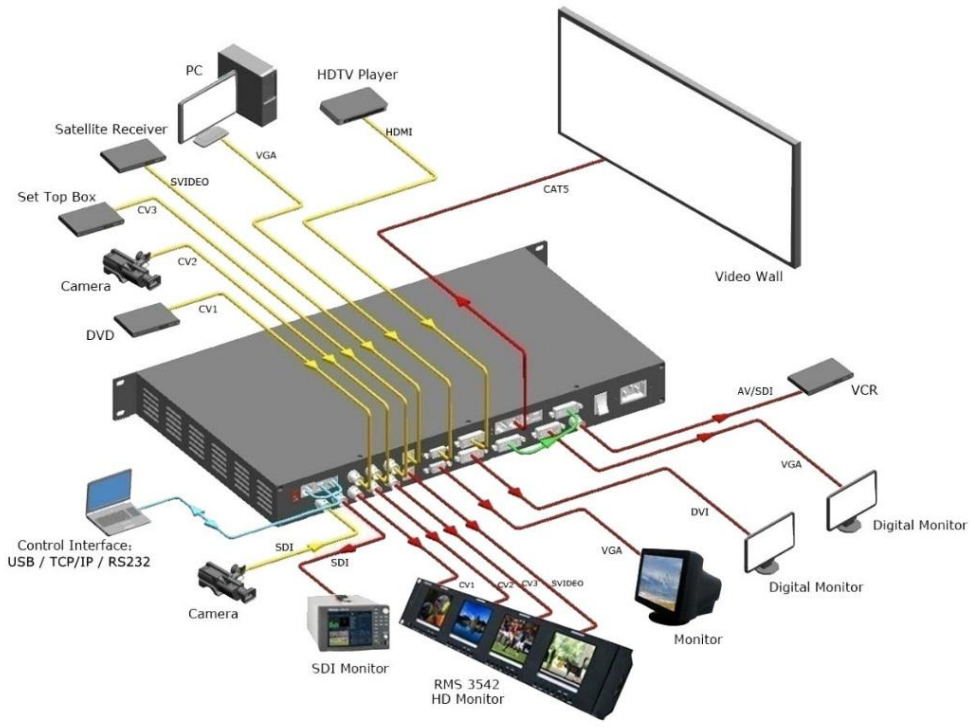
4. Features

The LX496, incorporating VXP image processing technology, is a high-performance video scaler, scan convertor, switcher and transcoder processor all in one. It is the ideal solution for converting RGB, HDTV, component, S-video, composite (NTSC, PAL and SECAM), DVI (HDMI® compatible), SDI (SD/HD/3G compatible) into a user-selectable video format.

The LX496 works as a real seamless, 2-layer switcher with a loop out for each input. All inputs support loop trough output. It combines truly seamless, glitch-free switching with advanced scaling technology to meet the requirements of high-quality, high-resolution video presentation. The LX496 is designed to deliver advanced capabilities to high-end presentation environments.

- 3G/HD/SD SDI input
- 1 composite, 1 S-Video input
- 1 component input
- VGA input support RGBHV / RGBS / RGSB
- 1 DVI input support 1080p video and 1600 x 1200, HDMI® 1.3 compatible input, support video and graphic input
- 1 DisplayPort (DP) input
- 5 audio inputs
- 1 DVI and 1 VGA output
- 1 XLR audio output
- user-defined aspect ratio conversion and adjustment
- pan and zoom
- freeze
- 10-bit process
- motion adaptive and field-to-frame de-interlacing modes
- 3.2 pull-down detection for NTSC and 2.2 film detection for PAL video source
- decodes NTSC, PAL and SECAM
- RS-232, USB, and Ethernet remote control
- LED sending card (Linsn TS802) already installed
- 3 saving modes
- 3 independent memory presets

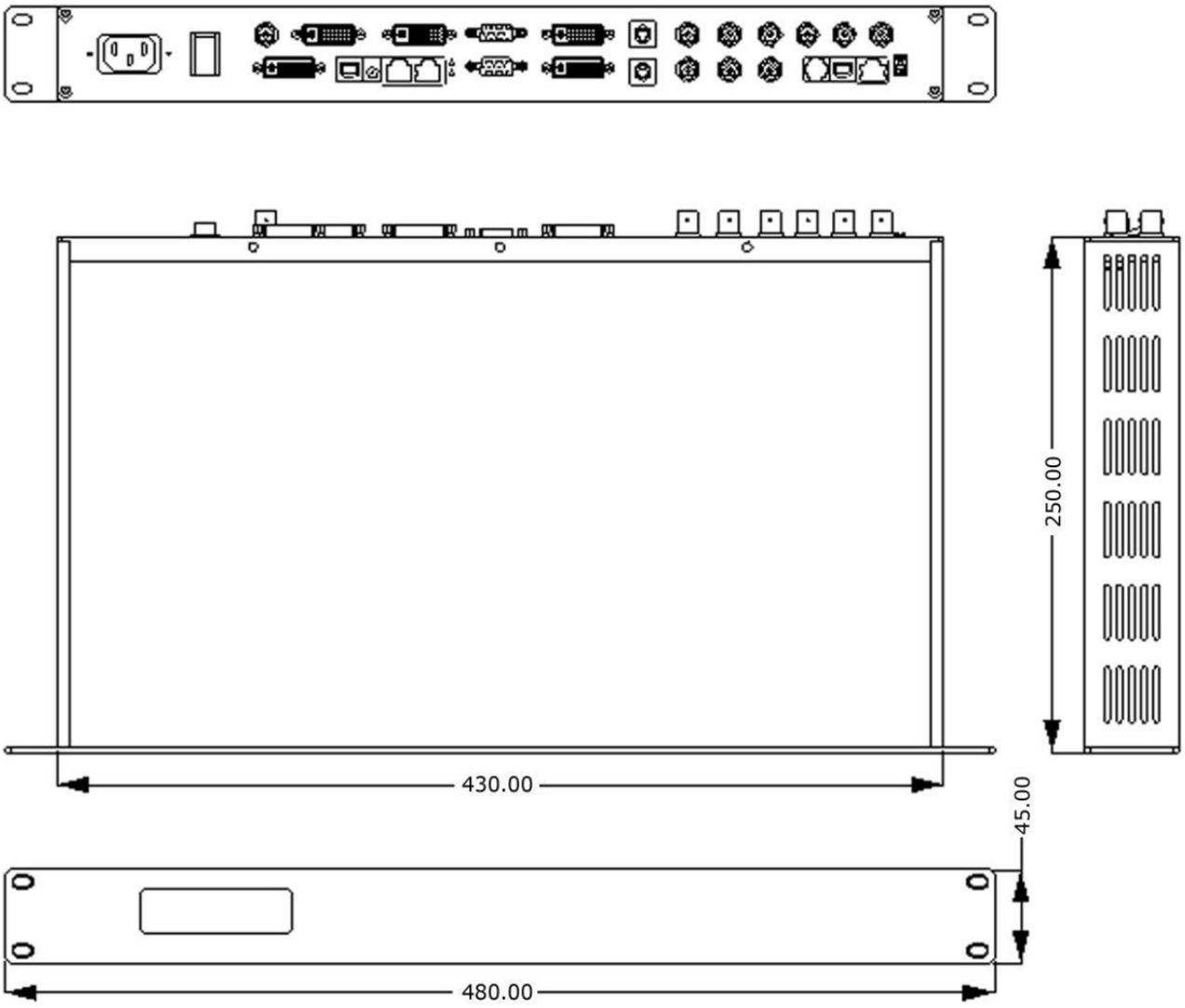
5. Application Scheme



6. Hardware Installation

Dimensions

The image below shows the dimensions of the device.



Precautions and Site Preparation

Before installation, please observe the following important safety and handling rules to avoid damage to the equipment and personal injury.

To protect users from electric shock, ensure that the chassis connects to earth via the ground wire provided in the AC power cord.

- The mains plug should always remain readily operable. Unplug the power supply cord from the mains to disconnect the device.
- The environment where you install the device shall be clean, properly lit, free from static, and have adequate power, ventilation, and sufficient space for all components.

Installation

The LX496 video scan convertor and scaler is designed to be rack-mounted. Before mounting this device, make sure to read chapters **2. Safety Instructions** and **3. General Guidelines** first.

To install the device:

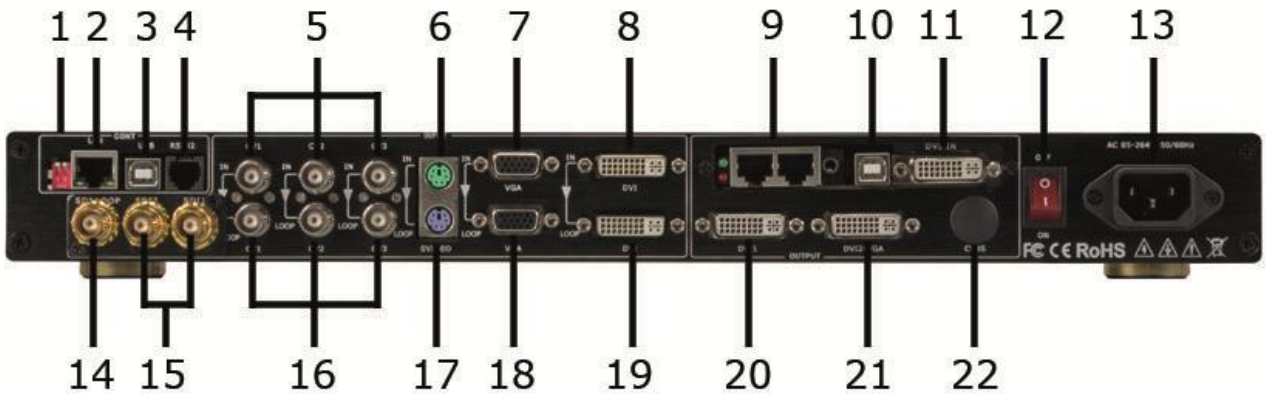
1. Mount in a 2U 19" rack.

2. Leave 1" (2.5 cm) on all sides to ensure proper ventilation.

3. Mount this device near PC for easy connection and setup.

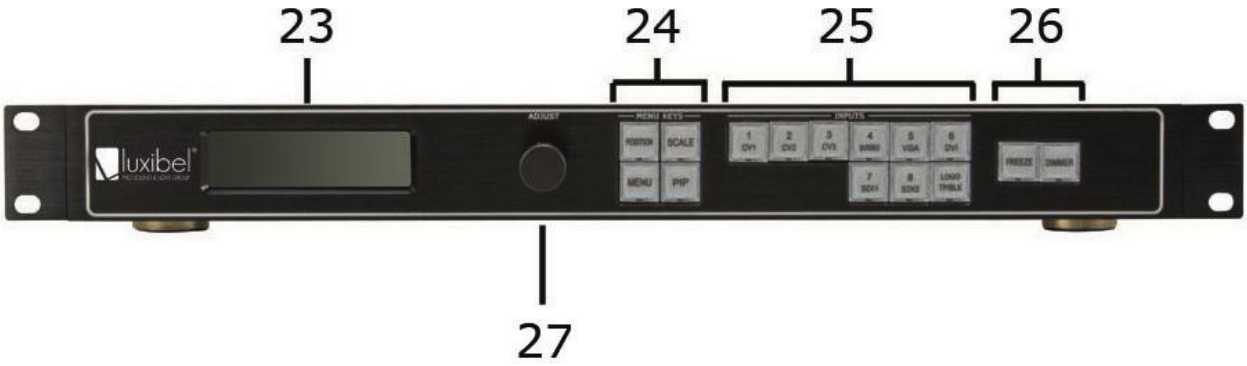
7. Hardware Overview

7.1 Rear Panel



No.	Name on panel	Description
1	DIP switches	For normal operation, make sure the dip switches are in the upper position. Used for IP software download/installation/upgrade.
2	LAN	8P8C 10/100 Mbps UDP interface.
3	USB	USB interface to connect to a computer.
4	RS232	6P6C (RJ11) connector to connect a computer via RS-232. You will need an adapter cable (not incl.).
5	CV1-3	Composite video BNC input ports 1–3. Support video signals from players, cameras, etc. Supports PAL, NTSC and SECAM.
6	S-VIDEO	mini-DIN-4 S-Video input port. Supports PAL, NTSC, and SECAM.
7	VGA	15-pin D-sub VGA connector for VGA input signals. Compatible with component YPbPr signals.
8	DVI	DVI input port for sending card. To connect the DVI output from another video processor. This connection does not support hot plugging.
9		8P8C 10/100Mbps interface to connect an LED screen + power supply jack for sending card.
10		USB control port for sending card.
11	DVI IN	DVI input port for sending card. To connect the DVI output from another video processor. This connection does not support hot plugging.
12	ON-OFF	On/off switch.
13	AC 85-264V	Power cord connector.
14	SDI LOOP	BNC output port to another SDI input.
15	SDI1-2	BNC input ports receiving signal from an HD player or camera.
16	CV1-3	Composite video BNC output ports 1–3. Support video signals from players, cameras, etc. Supports PAL, NTSC and SECAM.
17	S-VIDEO	mini-DIN-4 S-Video output port. Supports PAL, NTSC, and SECAM.
18	VGA	15-pin D-sub VGA connector for VGA output signals. Compatible with component YPbPr signals.
19	DVI	Connection to another LX496 or any device with DVI input.
20	DVI1	DVI (DVI-I) output to a monitor or LED screen that supports DVI. This connector does not support hot plugging.
21	DVI2+VGA	DVI+VGA output connector (DVI-I). To connect to a monitor or LED screen that supports DVI or VGA interfacing. $$$ This connector does not support hot plugging. To connect to a VGA interface, you need a DVI-to-VGA adapter (not incl.).
22	CVBS	Output connection to another CVBS input.

7.2 Front Panel



Also, refer to the image on page 6.

Plug in the power cord **[13]** and switch on the device using the on/off switch **[12]**.

The display **[23]** shows the name of the device. The device performs a self-test, and then loads the last used settings and sends the image to the target output.

Note: If you are using the device for the first time, the default input channel is CV1.

After initialisation, the display cycles through the following information:

- current input channel
- current output format
- software program version
- device serial number
- IP address.

Use the front panel keys to use the settings menu. All keys are described in detail below.

Display [23]

Menu Keys [24]

POSITION	Image position adjustment
SCALE	Rescale the video image
MENU	Main menu access
PIP	Picture-in-picture/single picture image

Input Keys [25]

CV1–CV3	Corresponds with the CV1–CV3 connectors **[5]**.
SVIDEO	Corresponds with the SVIDEO connector **[6]**.
VGA	Corresponds with the VGA connector **[7]**.
DVI	Corresponds with the DVI connector **[8]**.
SDI1-SDI2	Corresponds with the SDI IN connector **[15]**.
LOGO TP/ BLK	Test pattern key

Function Keys [26]

FREEZE	Image freeze/unfreeze
DIMMER	Image transparency adjustment

Navigation knob [27]

Turn the knob to navigate through the menu, press to confirm your selection.

8. Operation

8.1 Output Resolution

1. Measure the width and length of the LED screen, e.g. 1920 x 1080.
2. Press MENU to enter the menu.
3. Rotate the knob and select OUTPUT. Press the knob to confirm.

4. Rotate the knob and select OUTPUT RES. Press the knob to confirm.
5. Rotate the knob and select DVI/VGA RES. Press the knob to confirm.
6. Rotate the knob and select the desired output resolution. Press the knob to confirm.
7. Press MENU to return and exit the settings.

Note: The selected output format must be higher than or equal to the resolution of the output display. Make sure to select the suitable resolution for best image quality. However, image will be poor when choosing too large a resolution. The LX496 supports 13 output resolutions.

8.2 Seamless Input Switching

1. The LX496 allows seamless switching between channels.
2. Press the channel key on the front panel.

Note: The switching speed can be adjusted through the DIMMER button on the front panel.

8.3 Scale and Position Setting

Different channels may have different picture size and position. The LX496 allows you to set size and position for each channel.

1. Press the corresponding channel button.
2. Press SCALE to enter the scale menu.
3. Respectively set the dimensions of the picture under WIDTH and HEIGHT. Press the rotating knob to confirm.
4. Do the same for the picture position under POSITION and set POS X and POS Y.
5. Press MENU to return and exit the settings.

8.4 Realizing Picture-In-Picture (PIP) Images

Selecting the Primary and Secondary Images

1. Press the button corresponding to your primary image source.
2. Press PIP to select the picture-in-picture function.
3. Select your secondary image (select an image source different from your primary image source).

Setting Size and Position

1. Press MENU to enter the menu.
2. Rotate the knob and select OUTPUT. Press the knob to confirm.
3. Rotate the knob and select PIP SETTING. Press the knob to confirm.
4. Rotate the knob and select IMAGE1 or IMAGE2. Press the knob to confirm.
5. Press SCALE or POSITION and rotate the knob to select the corresponding image (IMAGE2). Press the knob to confirm.
6. Rotate the knob to set the image size values and position. Press the knob to confirm.
7. Press MENU to return and exit the settings.
8. Press PIP to return to single-image screen.

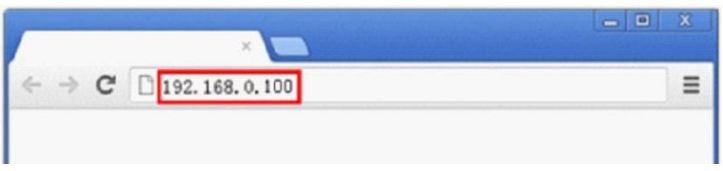
8.5 Saving Parameters

1. Press MENU to enter the menu.
2. Rotate the knob and select VIEW. Press the knob to confirm.
3. Rotate the knob and select SAVE. Press the knob to confirm.
4. Rotate the knob and select USER1 or USER2. Press the knob to confirm.
5. Recall the saved parameters under RECALL.

9. Web Server

9.1 Setting up the Communication

1. Open your Google Chrome browser.
2. Enter IP address 192.168.0.100 in the search engine and press RETURN on your keyboard.

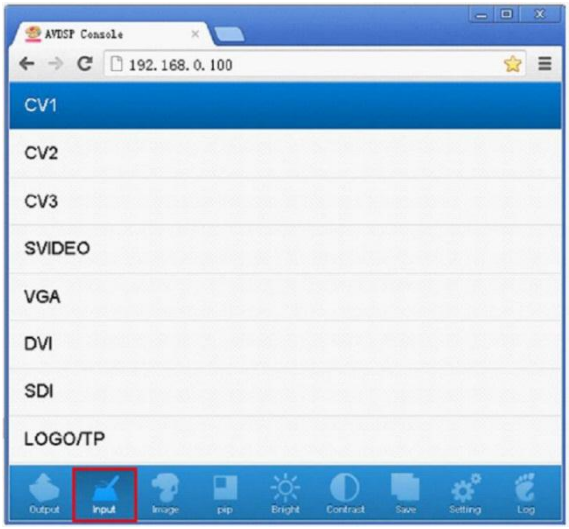


9.2 Setting the Output Resolution

1. Select the OUTPUT icon in the taskbar.
2. The LX496 offers up to 15 different output resolutions to choose from.
3. Select the desired output resolution and the resolution will be updated automatically.

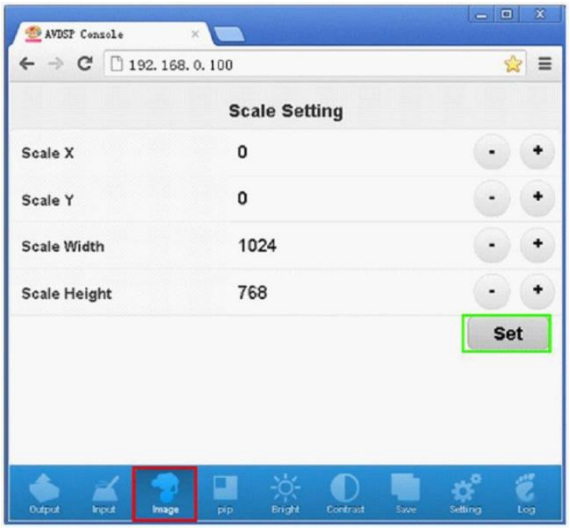
9.3 Switching the Input Signal

1. Select the INPUT icon in the taskbar.
2. Select the desired signal source.



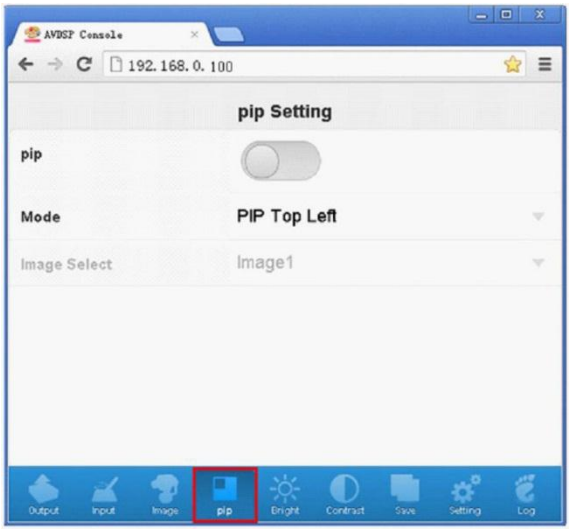
9.4 Setting the Image Size and Position

1. Select the IMAGE icon in the taskbar.
2. Modify the parameters with + or -.
3. Click SET to confirm.

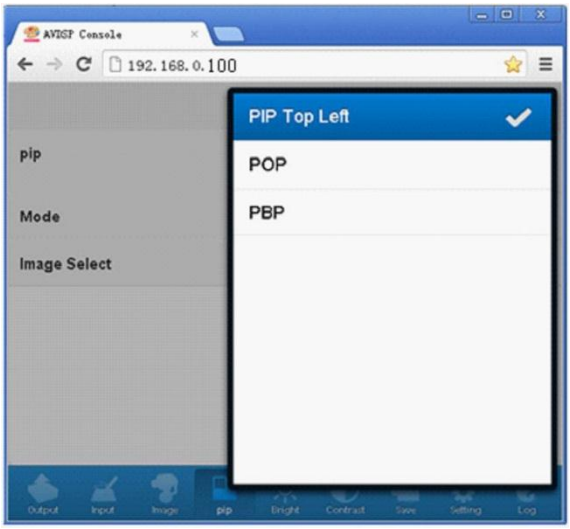


9.5 Setting Picture-In-Picture (PIP) Images

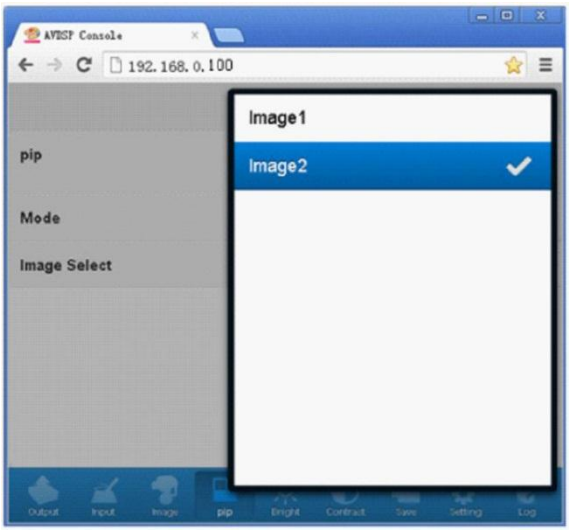
1. Select the PIP icon in the taskbar.
2. Click and hold the slider with the left mouse button, and slide to the right to activate the PIP function.



3. Next, choose the position of your secondary image. Click the MODE tab.
4. Choose the desired picture location: PIP Top Left, POP (Picture Outside of Picture meaning 2 pictures side by side) or PBP (Picture by Picture meaning side-by-side display from 2 different video sources).



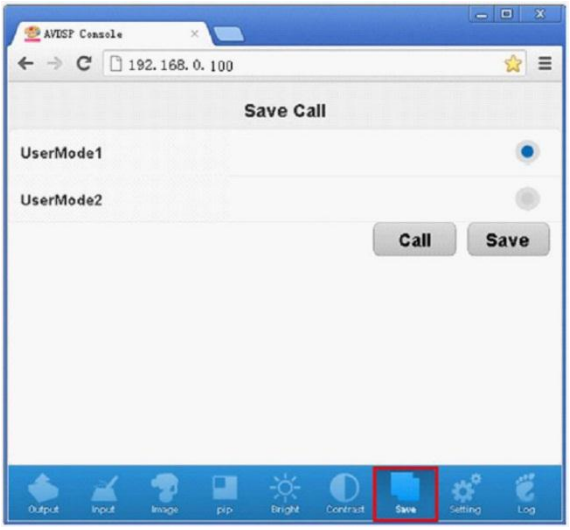
5. Finally, select the video source, i.e. IMAGE1 or IMAGE2.



6. You can now modify the parameters for the selected image by clicking the corresponding tab in the taskbar.
Note: The PIP function will display the same image if Image1 and Image2 have the same video input source.

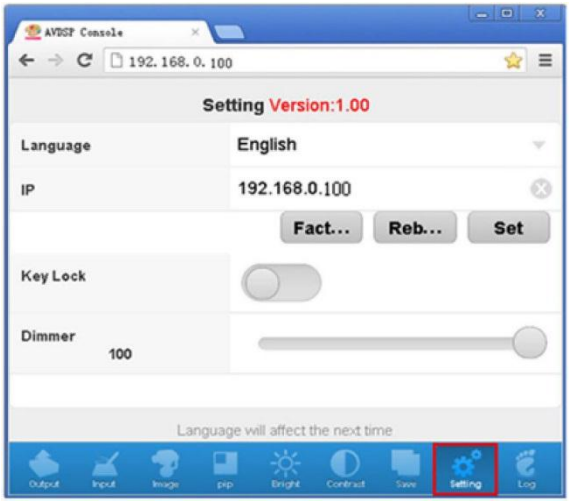
9.6 Saving and Recalling Parameters

1. Select the SAVE icon in the taskbar.
2. Select the desired USERMODE by clicking the corresponding bullet.
3. You can now save (SAVE) or recall (CALL) parameters.

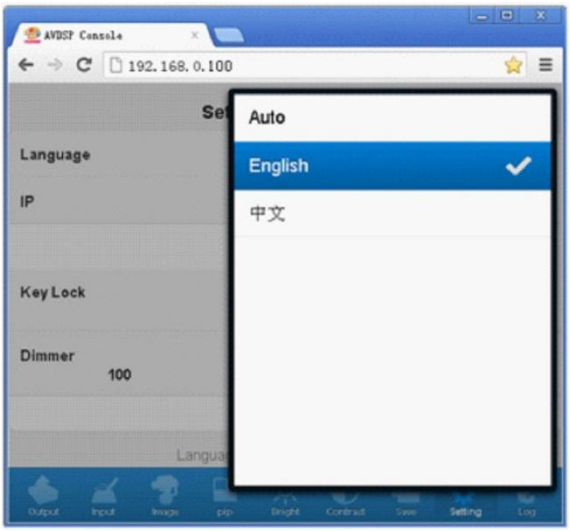


9.7 Other Settings

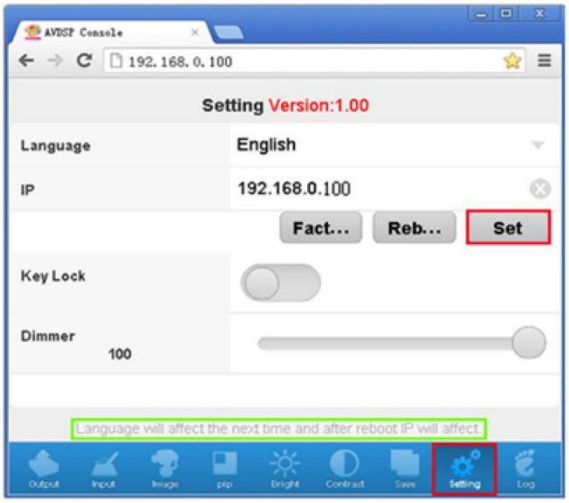
1. Select the SETTING icon in the taskbar.



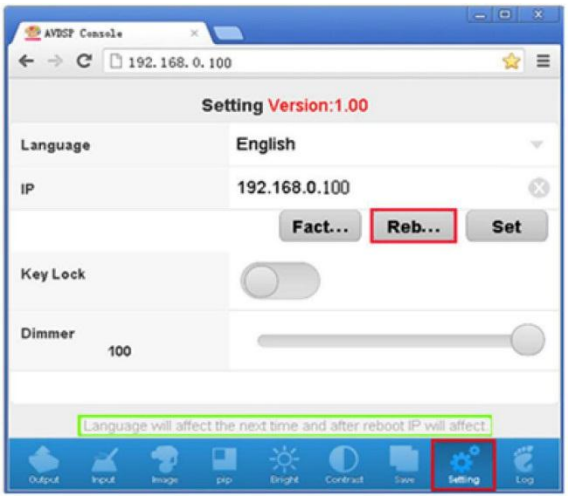
2. Choose the desired language (English or Chinese) under the LANGUAGE tab.



3. Confirm by clicking SET.



4. The selection will be effective after rebooting. To do so, click the REB… button.



5. Proceed in the same way to modify the IP address (IP).
6. Also, lock or unlock the function keys (KEYLOCK) and set the alpha transparency level (DIMMER) if desired.

10. Troubleshooting

Problem	Possible Solution
No output image	**Check your input signal** Please check that your input device is properly connected and configured.

	Check your output signal Please check that your output device is properly connected and configured.
Only a part of the image appears on the display	**Your image may not be configured correctly** Zoom out your image. Reconfigure your image.
Abnormal colour with SDI input signal	**Incorrect SDI input configuration** Press MENU to enter the menu. Select <INPUT> with LEFT or RIGHT. Press SEL to enter the submenu. Select <SDI ADJUST> with UP or DOWN. Press SEL to enter the submenu. Select <H POS> with UP or DOWN. Press SEL to enter the submenu. Adjust the values with UP or DOWN.

11. Technical Specifications

video inputs	
signal type	3 x composite, 1 x DVI (HDMI® 1.3 compatible), 1 x VGA, 1 x 3G SDI (optional), 1 x S-Video
connectors	4 x BNC, 4 x DVI-I, 1 x DB15, 1 x DIN4
nominal level	
	CVBS/Y 1 Vpp ± 3 dB (0.7 V video +0.3 V sync) 75 ohm RGB, Hsync, Vsync 0 to 1 Vpp (0.7 V video +0.3 V sync) 75 ohm
black level	300 mV
sync-tip	0 V
standard	HDMI® 1.3 compatible
impedance	75 ohm
horizontal frequency	autoscan 15 kHz to 100 kHz
vertical frequency	autoscan 50 Hz to 120 Hz
resolution range	autoscan 640 x 480 to 2048 x 1152
video processing	
encoder	10 bit digital
digital sampling	30 bit, 10 bit per colour, 165 MH standard
colours	16.78 million
horizontal filtering	3 levels
vertical filtering	3 levels
encoder filtering	3 levels
video output	
signal type	2 DVI, 1 VGA, 1 composite (CVBS), 1 3G SDI
connectors	2 DVI-I, 2 BNC
impedance	75 ohm
general	
power supply	85-285 VAC 50/60 Hz
power consumption	25 W
weight	2.5 kg

Use this device with original accessories only. Velleman nv cannot be held responsible in the event of damage or injury resulting from (incorrect) use of this device. For more info concerning this product and the latest version of this manual, please visit our website www.luxibel.com. The information in this manual is subject to change without prior notice.

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Velleman® Service and Quality Warranty

Since its foundation in 1972, Velleman® acquired extensive experience in the electronics world and currently distributes its products in over 85 countries.

All our products fulfil strict quality requirements and legal stipulations in the EU. In order to ensure the quality, our products regularly go through an extra quality check, both by an internal quality department and by specialized external organisations. If, all precautionary measures notwithstanding, problems should occur, please make appeal to our warranty (see guarantee conditions).

General Warranty Conditions Concerning Consumer Products (for EU):

• All consumer products are subject to a 24-month warranty on production flaws and defective material as from the original date of purchase.

• Velleman® can decide to replace an article with an equivalent article, or to refund the retail value totally or partially when the complaint is valid and a free repair or replacement of the article is impossible, or if the expenses are out of proportion.

You will be delivered a replacing article or a refund at the value of 100% of the purchase price in case of a flaw occurred in the first year after the date of purchase and delivery, or a replacing article at 50% of the purchase price or a refund at the value of 50% of the retail value in case of a flaw occurred in the second year after the date of purchase and delivery.

• Not covered by warranty:

- all direct or indirect damage caused after delivery to the article (e.g. by oxidation, shocks, falls, dust, dirt, humidity...), and by the article, as well as its contents (e.g. data loss), compensation for loss of profits;

- consumable goods, parts or accessories that are subject to an aging process during normal use, such as batteries (rechargeable, non-rechargeable, built-in or replaceable), lamps, rubber parts, drive belts... (unlimited list);

- flaws resulting from fire, water damage, lightning, accident, natural disaster, etc.…;

- flaws caused deliberately, negligently or resulting from improper handling, negligent maintenance, abusive use or use contrary to the manufacturer's instructions;

- damage caused by a commercial, professional or collective use of the article (the warranty validity will be reduced to six (6) months when the article is used professionally);

- damage resulting from an inappropriate packing and shipping of the article;

- all damage caused by modification, repair or alteration performed by a third party without written permission by Velleman®.

• Articles to be repaired must be delivered to your Velleman® dealer, solidly packed (preferably in the original packaging), and be completed with the original receipt of purchase and a clear flaw description.

• Hint: In order to save on cost and time, please reread the manual and check if the flaw is caused by obvious causes prior to presenting the article for repair. Note that returning a non-defective article can also involve handling costs.

• Repairs occurring after warranty expiration are subject to shipping costs.

• The above conditions are without prejudice to all commercial warranties.

The above enumeration is subject to modification according to the article (see article's manual).

Made in PRC
Imported by Velleman nv
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